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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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09/462,475 01/14/00 WATANABE

M P8384-9007

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IM22/0410

EXAMINER

ILDEBRANDO, C

| ART UNIT | PAPER NUMBER |
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1754

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DATE MAILED:

04/10/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

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|-----------------------------|----------------------------------|------------------------------------|
| <b>Offic Action Summary</b> | Application No.<br>09/462,475    | Applicant(s)<br>WATANABE, MASAHIRO |
|                             | Examiner<br>Christina Ildebrando | Art Unit<br>1754                   |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 January 2000.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1 and 2 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved.
- 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- 15) Notice of References Cited (PTO-892)
- 16) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
- 18) Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 19) Notice of Informal Patent Application (PTO-152)
- 20) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The lined through references cited in the Information Disclosure Statement 1/14/00 have not been considered. These documents do not appear to be prior art with regards to the claimed invention but notification forms to applicant.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 2 recites the limitation "wherein the alloy element of the platinum alloy is any of ruthenium...or manganese." This limitation renders the claim indefinite because it is not clear what applicant intends to encompass with the recitation "any of", i.e. the scope of the claim is not clear. It is not clear if applicant intends to recite the metals in Markush format.

5. In addition, claim 2 recites the limitation "the alloy element." Claim 1 recites "the alloy metal." It is suggested that applicant amend the claims such that there is consistent antecedent basis for all limitations throughout the claims.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Fleming et al.

Fleming et al. (US 3,884,838) discloses a catalyst composition useful for reacting carbon monoxide and/or carbon dioxide with hydrogen to form methane and water. The catalyst composition comprises ruthenium metal and minor amounts of reduced amorphous tungsten oxide (column 2, lines 52-55). The catalyst can also contain platinum as a ruthenium-platinum alloy (column 4, lines 45-50). A suitable catalyst can contain ruthenium in an amount of 40-95 percent by weight and platinum in the range of 0-47.5 percent by weight (column 6, lines 40-45). Fleming et al. further teaches that the catalyst composition can be supported on a crystalline aluminosilicate support such as mordenite (column 10, lines 32-40).

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Fleming et al.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 7-256112 in view of Database of Zeolite Structures.

JP 7-256112 discloses a catalyst composition comprising a zeolite and a metal supported thereon (Abstract). Suitable zeolites include those zeolites having an aperture size between 0.4 and 2 nm (0006, lines 41-42). The catalyst comprises a metal selected from the group consisting of platinum, palladium, rhodium, iridium, ruthenium, nickel, cobalt, and iron, or mixtures or alloys thereof (0006, lines 42-47). Alloys of metals with platinum are preferred (0006, lines 42-47). The reference does not teach the amount of the metal other than platinum present in the alloy. However, it is considered that it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Aller*, 105 USPQ 233.

JP 7-256112 does not disclose that the zeolite carrier is mordenite.

Database of Zeolite Structures (<http://www.iza-structure.org/databases>) teaches that mordenite has an aperture size of 7.542 angstrom (0.75 nm).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used mordenite as the zeolite carrier in the catalyst taught by JP 7-256112 in light of the disclosure of in the Database of Zeolite Structures. The

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selection of a known material based on its suitability for its intended use has been held to be a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 65 USPQ (1945). In this case, JP 7-256112 teaches zeolites with an aperture size of 0.4-2nm are suitable for use in the invention. The database of Zeolite Structures teaches that mordenite has an aperture size which would fall within the range, which would provide motivation for one of ordinary skill to choose mordenite as the zeolite carrier in the catalyst taught by JP 7-256112.

10. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shelef.

Shelef (US 6,117,581) discloses a fuel cell electrode comprising conductive zeolite support material. The electrode further includes particulate noble metals, such as platinum, palladium, ruthenium, rhodium, osmium, iridium, and their alloys (column 4, lines 1-5). Platinum alloys are the preferred noble metal materials (column 4, lines 4-5). The support material comprises carbon and zeolite (column 4, lines 12-18). Suitable zeolites include mordenite (column 4, lines 52-55).

The reference does not teach the amount of the alloy metal other than platinum. However, it is considered that it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose the instantly claimed ranges through process optimization, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. See *In re Aller*, 105 USPQ 233. One would have been motivated to do so in order to obtain the best results from the catalyst.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Watanabe et al. (US 5,189,005) discloses an electrocatalyst containing a platinum alloy. Refer to columns 1-3.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Ildebrando whose telephone number is (703) 305-0469. The examiner can normally be reached on Monday-Friday, 7:30-5, First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 305-6078 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

  
STEVEN P. GRIFFIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

CAI  
April 6, 2001